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	20	(human or sapien) near4 carboxylesterase	USPAT	OR	OFF	2005/06/15 17:12
L2	0	(brain or neuron or cord) near4 carboxylesterase	USPAT	OR	OFF	2005/06/15 17:13
L3	0	(brain or neuron or cord) near10 carboxylesterase	USPAT		OFF	2005/06/15 17:13
L4	12	L1 and (brain or neuron or cord)	USPAT	OR	OFF	2005/06/15 17:14

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enhanced
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                  Original IDE display format returns to
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                  fields
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                 Improved searching of U.S. Patent Classifications
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=> s (brain or neuron or cord) (5A) carboxylesterase

=> s 11 and 12

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L4 ANSWER 1 OF 12 CAPLUS COPYRIGHT 2005 ACS on STN

AN 2003:829913 CAPLUS

DN 140:176268

TI Protein and cDNA sequences of 24.64-kilodalton human carboxylesterase sequence homolog and their therapeutic uses

IN Mao, Yumin; Xie, Yi

PA Bode Gene Development Co., Ltd., Shanghai, Peop. Rep. China

SO Faming Zhuanli Shenqing Gongkai Shuomingshu, 31 pp. CODEN: CNXXEV

DT Patent

LA Chinese

FAN.CNT 1

DATE	PATENT NO.	KIND	DATE	APPLICATION NO.
	·································			
ΡI	CN 1382799	А	20021204	CN 2001-112736
20010			20021204	CN 2001-112/30

20010426

PRAI CN 2001-112736 20010426

The invention provides protein and cDNA sequences of a novel 24.64-kilodalton human protein, designated as "
carboxylesterase 24.64", which is homologous to carboxylesterase.
The invention relates to expression of carboxylesterase sequence

homolog

in E. coli transfected with plasmid encoding the protein. The invention

also relates to preparation of antibody against carboxylesterase sequence

homolog. The invention further relates to the use of the protein in

treatment of carboxylesterase sequence homolog-related diseases (such as

primary hypertension, peptic ulcer, renopathy syndrome, bronchial asthma,

paralysis agitans, etc).

L4 ANSWER 2 OF 12 CAPLUS COPYRIGHT 2005 ACS on STN

```
135:103447
DN
     Human carboxylesterase 9 and its cDNA and use thereof
ΤI
     Mao, Yumin; Xie, Yi
IN
     Fudan University, Peop. Rep. China; Shanghai Bio Door Gene
PA
Technology Ltd.
     PCT Int. Appl., 32 pp.
SO
     CODEN: PIXXD2
DT
     Patent
     Chinese
LA
FAN.CNT 1
     PATENT NO.
                        KIND DATE APPLICATION NO.
DATE
PI WO 2001048217 A1
                                20010705 WO 2000-CN580
20001218
        W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA,
CH, CR,
            CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM,
HR, HU,
             ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS,
LT, LU,
            LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO,
RU, SD,
            SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ,
VN, YU,
             ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM
        RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE,
CH, CY,
            DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE,
TR, BF,
            BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG
     CN 1300846
                         Α
                               20010627 CN 1999-125735
19991223
     AU 2001019848 A5 20010709 AU 2001-19848
20001218
PRAI CN 1999-125735 A
WO 2000-CN580 W
                               19991223
                               20001218
    The invention provides cDNA sequences of a novel human
AB
     carboxylesterase 9 cloned from placenta brain. The
     invention also relates to constructing carboxylesterase 9 gene
expression
     vectors to prepare recombinant carboxylesterase 9 protein using
E.coli cells
    or eukaryotic cells. Methods of expressing and preparing
     carboxylesterase 9 protein and its antibody are described.
Methods of
    using carboxylesterase 9 gene or protein products for the
treatment of
    various kinds of diseases, such as cancer, blood diseases, HIV
infection,
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2001:489645 CAPLUS

AN

immune diseases and inflammation are also disclosed.

RE.CNT 2 THERE ARE 2 CITED REFERENCES AVAILABLE FOR THIS RECORD ALL CITATIONS AVAILABLE IN THE RE FORMAT

L4 ANSWER 3 OF 12 BIOSIS COPYRIGHT (c) 2005 The Thomson Corporation on STN

AN 2000:215924 BIOSIS

DN PREV200000215924

TI cDNA cloning, characterization and stable expression of novel human brain carboxylesterase.

AU Hosokawa, Masakiyo [Reprint author]; Mori, Mieko [Reprint author];

Ogasawara, Yuko [Reprint author]; Tsukada, Eiko [Reprint author]; Chiba,

Kan [Reprint author]

CS Lab. Biochem. Pharmacol. Toxicol. Facul. Pharm. Sci, Chiba Univ., Chiba,

263-8522, Japan

SO Japanese Journal of Pharmacology, (2000) Vol. 82, No. Suppl. 1, pp. 114P.

print.

Meeting Info.: 73rd Annual Meeting of the Japanese Pharmacological

Society. Yokohama, Japan. March 23-25, 2000.

CODEN: JJPAAZ. ISSN: 0021-5198.

DT Conference; (Meeting)

Conference; Abstract; (Meeting Abstract)

LA English

ED Entered STN: 31 May 2000 Last Updated on STN: 5 Jan 2002

L4 ANSWER 4 OF 12 MEDLINE on STN

DUPLICATE 1

AN 1999448370 MEDLINE

DN PubMed ID: 10518925

TI cDNA cloning, characterization and stable expression of novel human brain carboxylesterase.

AU Mori M; Hosokawa M; Ogasawara Y; Tsukada E; Chiba K

CS Laboratory of Biochemical Pharmacology and Toxicology, Faculty of Pharmaceutical Sciences, Chiba University, Japan.

SO FEBS letters, (1999 Sep 10) 458 (1) 17-22. Journal code: 0155157. ISSN: 0014-5793.

CY Netherlands

DT Journal; Article; (JOURNAL ARTICLE)

LA English

FS Priority Journals

OS GENBANK-AB025026; GENBANK-AB025028

EM 199910

ED Entered STN: 20000111 Last Updated on STN: 20000111 Entered Medline: 19991028

AB The DNA sequence encoding a novel human brain carboxylesterase (CES) has been determined. The protein is

predicted to have 567 amino acids, including conserved motifs, such as

GESAGG, GXXXXEFG, and GDHGD which comprise a catalytic triad, and the

endoplasmic reticulum retention motif (HXEL-COOH) observed in CES families. Their gene products exhibited hydrolase activity towards

temocapril, p-nitrophenyl-acetate and long-chain acyl-CoA. Since the

molecular masses of these gene products are similar to those that exist in

capillary endothelial cells of the human brain [Yamamda et al. (1994)

Brain Res. 658, 163-167], these CES isozymes may function as a blood-brain

barrier to protect the central nervous system from ester or amide compounds.

L4 ANSWER 5 OF 12 CAPLUS COPYRIGHT 2005 ACS on STN

AN 1998:174252 CAPLUS

DN 128:318185

TI Inhibition of carboxylesterases in SH-SY5Y human and NB41A3 mouse neuroblastoma cells by organophosphorus esters

AU Ehrich, Marion; Correll, Linda

CS Virginia-Maryland Regional College of Veterinary Medicine, Blacksburg, VA,

24061-0442, USA

SO Journal of Toxicology and Environmental Health, Part A (1998), 53(5),

385-399

CODEN: JTEHF8

PB Taylor & Francis

DT Journal

LA English

AB Carboxylesterases (CbxE) can be inhibited by organophosphorus esters (OPs)

without causing clin. evidence of toxicity. CbxE are thought to protect

the critical enzyme acetylcholinesterase (AChE) from OP inhibition in

animals. CbxE and AChE are both present in neuroblastoma cells, but, even

though these cells have potential to be an in vitro model of OP toxicity,

the effect of OPs on CbxE and the relationship of CbxE inhibition and AChE

inhibition have not yet been examined in these cells.

Therefore, this study

examined concentration-related OP-induced inhibition of CbxE in human SH-SY5Y and

mouse NB41A3 neuroblastoma cells with 11 active esterase inhibitors:

paraoxon, malaoxon, chlorpyrifos-oxon, tolyl saligenin phosphate (TSP), Ph

saligenin phosphate (PSP), diisopropyl phosphorofluoridate
(DEP), mipafox,

dichlorvos, trichlorfon, dibutyryl dichlorovinyl phosphate (DBVP), and

dioctyl dichlorovinyl phosphate (DOVP). All could inhibit CbxE, although

the enzyme was less likely to be inhibited than AChE following exposure to

9 of the test compds. in the human cell line and to all 11 of the test

compds. in the murine cell line. Species differences in concentration-related

inhibitions of CbxE were evident. When cells were exposed first to an OP

with a low IC50 toward CbxE (PSP), followed by an OP with high affinity

for AChE (paraoxon or malaoxon), inhibitions of CbxE and AChE were  $\,$ 

additive. This indicated that CbxE did not protect AChE from OP-induced

inhibition in this cell culture model.

RE.CNT 29 THERE ARE 29 CITED REFERENCES AVAILABLE FOR THIS RECORD ALL CITATIONS AVAILABLE IN THE RE FORMAT

L4 ANSWER 6 OF 12 MEDLINE on STN

DUPLICATE 2

AN 95135908 MEDLINE

DN PubMed ID: 7834338

TI Immunohistochemistry with an antibody to human liver carboxylesterase in human brain tissues.

AU Yamada T; Hosokawa M; Satoh T; Moroo I; Takahashi M; Akatsu H; Yamamoto T

CS Department of Neurology, Chiba University, Japan.

SO Brain research, (1994 Sep 26) 658 (1-2) 163-7. Journal code: 0045503. ISSN: 0006-8993.

CY Netherlands

DT Journal; Article; (JOURNAL ARTICLE)

LA English

FS Priority Journals

EM 199503

ED Entered STN: 19950314 Last Updated on STN: 19980206

Entered Medline: 19950302

AB **Human** liver **carboxylesterase** (CE) is an enzyme capable of metabolizing drugs, and may also function as a regulator of lipid

metabolism. We examined one isoform of CE by immunohistochemistry in the

brains of neurologically normal, Alzheimer disease (AD), amyotrophic

lateral sclerosis (ALS) and cerebral infarction cases. In all but the

infarcted brains, the anti-CE antibody stained only capillary endothelial

cells in the brain and spinal cord tissues. In infarct brain areas,

intense immunoreactivity of the macrophages was seen. In contrast, the

macrophages in the ALS lateral columns and the reactive microglia located

in the center of classical senile plaques in AD, as well as other reactive

microglial cells in the grey matter, showed no immunoreactivity. In the

central nervous system, CE may function as a protective factor against

foreign chemicals in capillary endothelial cells, and the antibody to CE

may serve as a marker for invading macrophages from the systemic circulation.

L4 ANSWER 7 OF 12 CAPLUS COPYRIGHT 2005 ACS on STN

AN 1984:525745 CAPLUS

DN 101:125745

TI The effect of nordihydroguaiaretic acid and related lignans on formyltetrahydrofolate synthetase and carboxylesterase

AU Schegg, Kathleen M.; Welch, William, Jr.

CS Dep. Biochem., Univ. Nevada, Reno, NV, 89557, USA

SO Biochimica et Biophysica Acta (1984), 788(2), 167-80 CODEN: BBACAQ; ISSN: 0006-3002

DT Journal

LA English

AB The lignans nordihydroguaiaretic acid (NDGA),

heminordihydroguaiaretic

acid (HNDGA), and norisoguaiacin inhibited formyltetrahydrofolate synthetase (EC 6.3.4.3) and carboxylesterase (EC 3.1.1.1) activity from a

wide variety of sources. In all cases, NDGA was the most effective

inhibitor. Synthetase activity was reduced by half at NDGA concns. of

0.11--0.24 mM. Esterase activity consisted of NDGA-sensitive and NDGA-resistant forms. The sensitive class was half-inhibited by  $2\text{--}4~\mu\text{M}$ 

NDGA. Irreversible inhibition of formyltetrahydrofolate synthetase by

NDGA was observed both at low protein concentration (<0.2 mg/mL) and at high protein

concentration, where precipitation of protein was observed Inhibition of

formyltetrahydrofolate synthetase by NDGA arises from a decrease in Vmax

and increase in Km for all substrates. In contrast, NDGA affects only the  $\,$ 

Vmax parameter of the esterase activity. The broad range of enzymes

inhibited by NDGA may be a consequence of the amphipathic character of the

mol. and the flexibility to accommodate to a variety of binding sites.

The previously reported ability of NDGA to inhibit phagocytosis may be due

to the compound's ability to inhibit carboxylesterases.

- L4 ANSWER 8 OF 12 CAPLUS COPYRIGHT 2005 ACS on STN
- AN 1983:501369 CAPLUS
- DN 99:101369
- TI Carboxylesterases in primate brain: characterization of multiple forms
- AU Chemnitius, J. M.; Zech, R.
- CS Med. Fak., Univ. Goettingen, Goettingen, D-3400, Fed. Rep. Ger.
- SO International Journal of Biochemistry (1983), 15(8), 1019-25 CODEN: IJBOBV; ISSN: 0020-711X
- DT Journal
- LA English
- AB Carboxylesterase activity of primate brain (Macaca mulatta) was determined by using Ph valerate (PV) as substrate. Eight

carboxylesterases of primate brain were characterized in respect to PV-hydrolyzing activity and to their inhibition rate consts.

for the reaction with organophosphorus compds. Carboxylesterase III was

identified as neurotoxic esterase. Organophosphate inhibition data for

primate acetylcholinesterase (EC 3.1.1.7) and of primate cholinesterase

(EC 3.1.1.8) were determined and compared to corresponding data for primate

brain carboxylesterases. Physiol. functions and the clin. and toxicol. significance of primate brain carboxylesterases are discussed.

- L4 ANSWER 9 OF 12 CAPLUS COPYRIGHT 2005 ACS on STN
- AN 1983:212020 CAPLUS
- DN 98:212020
- TI Malaoxon sensitivity of esterases from several species of teleosts
- AU Gantverg, A. N.; Perevoznikov, M. A.; Rozengart, V. I.
- CS Inst. Evol. Physiol. Biochem., Leningrad, USSR
- SO Zhurnal Evolyutsionnoi Biokhimii i Fiziologii (1983), 19(2), 191-3

CODEN: ZEBFAJ; ISSN: 0044-4529

- DT Journal
- LA Russian
- AB Malaoxon (I) is an effective inhibitor of esterases from the perch Perca

fluviatilis, pike Esox lucius, carp Cyprinus carpio, and roach Rutilus

rutilus. The sensitivity of cholinesterase from the brain of the fishes

investigated is practically identical and therefore it cannot account for

different resistance of the organism to I poisoning. Different sensitivity of the carp and perch to carbofos is paralleled by different

levels of the activity of carboxyesterase in these species. However.

significant anticarboxylesterase activity of I may prevent carbofos

hydrolysis in fish by carboxylesterase.

L4 ANSWER 10 OF 12 CAPLUS COPYRIGHT 2005 ACS on STN

AN 1979:119396 CAPLUS

DN 90:119396

TI Human microsomal carboxylesterase (E.C. 3.1.1.1.).

Distribution in several tissues and some preliminary observations on its

appearance in serum

AU Junge, Wolfgang

CS Zentrallab., Staedtisches Krankenhaus Kiel, Kiel, Fed. Rep. Ger.

SO Enzymes Health Dis., Inaug. Sci. Meet. Int. Soc. Clin. Enzymol. (1978),

Meeting Date 1977, 54-8. Editor(s): Goldberg, David M.; Wilkinson, John

Henry. Publisher: Karger, Basel, Switz.

CODEN: 39YUAE

DT Conference

LA English

AB Carboxyesterase levels were determined in various tissues in nonpathol. and

pathol. cases by kinetic and immunol. methods. Carboxysterase was

detected in the liver (.apprx.1.2 mg esterase/g tissue) and other organs

but not in serum or in any other body fluid in nonpathol. cases. The

serum of patients who had elevated levels of enzymes routinely used for

diagnosis of liver diseases were examined for carboxylesterase. The enzyme

was detected in 30% of the samples at levels of .apprx.20-6800 units/L.

The highest activities of carboxylesterase were found in diseases causing

acute or subacute liver congestion (acute right heart or global cardiac

failure, cardiogenic shock, status asthmaticus, or pulmonary artery

embolism. A profound damage of liver cells with subsequent liberation of

the microsomal bound esterase also occurred under various toxic conditions

(alc. or drug abuse).

L4 ANSWER 11 OF 12 MEDLINE on STN

DUPLICATE 3

AN 77157997 MEDLINE

DN PubMed ID: 857894

TI Carboxylesterases of human brain extract.
Purification and properties of a butyrylesterase.

AU Hojring N; Svensmark O

SO Biochimica et biophysica acta, (1977 Apr 12) 481 (2) 500-14. Journal code: 0217513. ISSN: 0006-3002.

CY Netherlands

DT Journal; Article; (JOURNAL ARTICLE)

LA English

FS Priority Journals

EM 197706

ED Entered STN: 19900313

Last Updated on STN: 19970203

Entered Medline: 19770630

AB 1. A carboxylesterase (carboxylic-ester hydrolase, EC 3.1.1.1) from human

brain extract was prepared to purity using DEAE-cellulose, Sephadex G-200,

and fractionation with (NH4)2SO4. The yield was about 20%. 2. Esters of

butyric acid were split faster than esters of acetic, propionic and

valeric acid, and the enzyme is tentatively designated as a butyrylesterase. Thiocholine esters were split at low rates. 3. The

molecular weight was estimated as 340 000 using gel chromatography on

Sephadex G-200. In isoelectric focussing the enzyme was resolved into

several peaks (pI 4.0--4.7). The low isoelectric point does not seem to

be due to terminal sialic acid residues. 4. The enzyme was irreversibly

inhibited by diethyl-p-nitrophenyl phosphate (ki = 206 mol-1 - 1
- s-1)

and by diisopropylfluorophosphate. The carboxylesterase inhibitor

bis-p-nitrophenyl phosphate and eserine did not inhibit the enzyme. 5.

The enzyme was progressively inhibited by p-hydroxy-mercuribenzoate, and

reactivated by dithiothreitol and 2-mercaptoethanol.

N-Ethylmaleimide

inactivated the enzyme very slowly, whereas iodoacetate and iodoacetamide

were without effect. 6. Ca2+, Mg2+, and Zn2+ or EDTA did not influence

the enzyme activity.

L4 ANSWER 12 OF 12 EMBASE COPYRIGHT 2005 ELSEVIER INC. ALL RIGHTS RESERVED.

on STN DUPLICATE 4

AN 77145644 EMBASE

DN 1977145644

TI Carboxylesterases with different substrate specificity in human brain

extracts.

AU Hojring N.; Svensmark O.

CS Inst. Biochem. B, Univ. Copenhagen

SO Journal of Neurochemistry, (1976) Vol. 27, No. 2, pp. 523-528. CODEN: JONRA

DT Journal

FS 029 Clinical Biochemistry

008 Neurology and Neurosurgery

LA English

AB Methods for the determination of carboxylesterase activity in soluble as

well as in particulate samples with p nitrophenylacetate and butyrate and

 $\boldsymbol{\alpha}$  naphthylacetate and butyrate as substrates are described. Of the

carboxylesterase activity of human brain, 8 to

20% was present in aqueous extracts. Particle bound carboxylesterases

could not be solubilized. By DEAE cellulose chromatography the carboxylesterases were separated into 6 more or less inhomogeneous

fractions. One of these was further resolved into 2 fractions by chromatography on CM cellulose. Fractions obtained by ion exchange

chromatography were resolved into several fractions by isoelectric

focusing. Gel chromatography on Sephadex G 200 resolved the carboxylesterases of brain extract into two fractions

(molecular weights about 60,000 and 300,000). At least 4 different types

of carboxylesterases could be distinguished on the basis of different

substrate specificity.

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□ 25: Stohlmacher P.

Related Articles, Links



[Aldehyde metabolizing enzymes in the central nervous system and liver--electrophoresis studies of alcoholism]

Beitr Gerichtl Med. 1991;49:143-7. German.

PMID: 1811491 [PubMed - indexed for MEDLINE]

□ 26: Hassan NF, Campbell DE, Rifat S, Douglas Related Articles, Links SD.

Isolation and characterization of human fetal brain-derived microglia in in vitro culture.

Neuroscience. 1991;41(1):149-58.

PMID: 1647502 [PubMed - indexed for MEDLINE]

**27:** Houwen RH, Scheffer H, te Meerman GJ, Related Articles, Links van der Vlies P. Buys CH.



Close linkage of the Wilson's disease locus to D13S12 in the chromosomal region 13q21 and not to ESD in 13q14.

Hum Genet. 1990 Oct;85(5):560-2.

PMID: 2227943 [PubMed - indexed for MEDLINE]

28: Kugusheva LI, Rozengart VI, Kozenasheva Related Articles, Links LIa, Kolesova VA.



A comparative study of the effect of vinyl phosphoric acid esters on cholinesterase and carboxylesterase activities in mammals and arthropods1

Zh Evol Biokhim Fiziol. 1990 Jan-Feb;26(1):30-4. Russian.

PMID: 2360379 [PubMed - indexed for MEDLINE]

29: Hayes GM, Woodroofe MN, Cuzner ML. Related Articles, Links



Characterisation of microglia isolated from adult human and rat brain.

J Neuroimmunol. 1988 Sep; 19(3):177-89.

PMID: 3410964 [PubMed - indexed for MEDLINE]

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